

**WHAT IS CLAIMED IS:**

1. A cable duct coupler for coupling a first cable duct section to a second cable duct section without the need for tools, said first and second cable duct sections each having an end, said cable duct coupler comprising:

a channel portion having a first portion generally complementary to said end of said first cable duct section and a second portion generally complementary to said end of said second cable duct section;

a first outer guide element generally complementary to said end of said first cable duct section and a second outer guide element generally complementary to said end of said second cable duct section;

wherein said end of said first cable duct section is receivable into said coupler between said first portion of said channel portion and said first outer guide element and said end of said second cable duct section is receivable into said coupler between said second portion of said channel portion and said second outer guide element;

a barb mount extending from at least one of said channel portion and said outer guide elements; and

a barb having a body and first and second arms extending from said body, said barb being mounted on said barb mount;

wherein at least a portion of said first arm extends at an angle between said first portion of said channel portion and said barb body and at least a portion of said second arm extends at an angle between said second portion of said channel portion and said barb body;

wherein upon insertion of said end of said first cable duct section into said coupler between said first portion of said channel portion and said first outer guide element, said first arm of said barb engages said first cable duct section to significantly resist withdrawal of said first cable duct section; and

wherein upon insertion of said end of said second cable duct section into said coupler between said second portion of said channel portion and said second outer guide element, said second arm of said barb engages said second cable duct section to significantly resist withdrawal of said second cable duct section.

2. A cable duct coupler in accordance with claim 1, further including a rib extending substantially perpendicularly and outwardly from at least a portion of said channel portion.

3. A cable duct coupler in accordance with claim 2, wherein said coupler has an axial direction and is symmetric about a plane perpendicular to said axial direction, said rib being generally centered relative to said plane of symmetry.

4. A cable duct coupler in accordance with claim 3, wherein said barb mount is disposed substantially on said rib.

5. A cable duct coupler in accordance with claim 2, wherein said barb mount is disposed substantially on said rib.

6. A cable duct coupler in accordance with claim 1, further including a cover substantially covering at least one side of said barb.

7. A cable duct coupler in accordance with claim 6, further including a fastener for jointly mounting said cover and said barb to said barb mount.

8. A cable duct coupler in accordance with claim 6, wherein said barb is deflectable into contact with said cover during withdrawal of said cable duct section from said coupler.

9. A cable duct coupler in accordance with claim 1, wherein at least one of said arms of said barb includes serrations thereon for enhancing said engagement between said at least one of said arms and said cable duct section engaged by said at least one of said arms.

10. A cable duct coupler in accordance with claim 9, wherein said serrations are at least included at the distal ends of said arms of said barb.

11. A cable duct coupler in accordance with claim 1, wherein at least one of said first portion of said channel portion and said second portion of said channel portion is generally U-shaped, having a bottom wall portion and two side portions and said cable duct section corresponding to said at least one of said first and second portions of said channel portion is also generally U-shaped, having a bottom wall portion and two side portions.

12. A cable duct coupler in accordance with claim 11, including at least three barbs, one corresponding to and disposed proximately to each of said bottom portion and said two side portions of said channel portion.

13. A cable duct coupler in accordance with claim 1, wherein said body portion includes a flange extending therealong.

14. A cable duct coupler in accordance with claim 13, wherein said body portion includes a pair of flanges extending therealong on opposite edges thereof.

15. A cable duct coupler in accordance with claim 1, wherein at least one arm of said barb includes a reinforcing rib extending therealong.

16. A cable duct coupler in accordance with claim 1, wherein said channel portion includes a plurality of contact ridges along an outer surface thereof.

17. A cable duct coupler in accordance with claim 1, wherein at least one of said outer guide elements includes a plurality of contact ridges along an inner surface thereof.

18. A cable duct system comprising:

- a first cable duct section having an end;
- a second cable duct section having an end; and
- a cable duct coupler including:
  - a channel portion having a first portion generally complementary to said end of said first cable duct section and a second portion generally complementary to said end of said second cable duct section;
  - a first outer guide element generally complementary to said end of said first cable duct section and a second outer guide element generally complementary to said end of said second cable duct section;
  - wherein said end of said first cable duct section is receivable into said coupler between said first portion of said channel portion and said first outer guide element and said end of said second cable duct section is

receivable into said coupler between said second portion of said channel portion and said second outer guide element;

a barb mount extending from at least one of said channel portion and said outer guide elements; and

a barb having a body and first and second arms extending from said body, said barb being mounted on said barb mount;

wherein at least a portion of said first arm extends at an angle between said first portion of said channel portion and said barb body and at least a portion of said second arm extends at an angle between said second portion of said channel portion and said barb body;

wherein upon insertion of said end of said first cable duct section into said coupler between said first portion of said channel portion and said first outer guide element, said first arm of said barb engages said first cable duct section to significantly resist withdrawal of said first cable duct section; and

wherein upon insertion of said end of said second cable duct section into said coupler between said second portion of said channel portion and said second outer guide element, said second arm of said barb engages said second cable duct section to significantly resist withdrawal of said second cable duct section.

19. A cable duct system in accordance with claim 18, further including a rib extending substantially perpendicularly and outwardly from at least a portion of said channel portion.

20. A cable duct system in accordance with claim 19, wherein said coupler has an axial direction and is symmetric about a plane perpendicular

to said axial direction, said rib being generally centered relative to said plane of symmetry.

21. A cable duct system in accordance with claim 20, wherein said barb mount is disposed substantially on said rib.

22. A cable duct system in accordance with claim 19, wherein said barb mount is disposed substantially on said rib.

23. A cable duct system in accordance with claim 18, further including a cover substantially covering at least one side of said barb.

24. A cable duct system in accordance with claim 23, further including a fastener for jointly mounting said cover and said barb to said barb mount.

25. A cable duct system in accordance with claim 23, wherein said barb is deflectable into contact with said cover during withdrawal of said cable duct section from said coupler.

26. A cable duct system in accordance with claim 18, wherein at least one of said arms of said barb includes serrations thereon for enhancing said engagement between said at least one of said arms and said cable duct section engaged by said at least one of said arms.

27. A cable duct system in accordance with claim 26 wherein said serrations are at least included at the distal ends of said arms of said barb.

28. A cable duct system in accordance with claim 18, wherein at least one of said first portion of said channel portion and said second portion of said channel portion is generally U-shaped, having a bottom wall portion and two side portions and said cable duct section corresponding to said at least one of said first and second portions of said channel portion is also generally U-shaped, having a bottom wall portion and two side portions.

29. A cable duct system in accordance with claim 28, including at least three barbs, one corresponding to and disposed proximately to each of said bottom portion and said two side portions of said channel portion.

30. A cable duct system in accordance with claim 26, wherein said body portion includes a flange extending therealong.

31. A cable duct system in accordance with claim 30, wherein said body portion includes a pair of flanges extending therealong on opposite edges thereof.

32. A cable duct system in accordance with claim 26, wherein at least one arm of said barb includes a reinforcing rib extending therealong.

33. A cable duct system in accordance with claim 18, wherein said channel portion includes a plurality of contact ridges along an outer surface thereof.

34. A cable duct system in accordance with claim 18, wherein at least one of said outer guide elements includes a plurality of contact ridges along an inner surface thereof.

35. A cable duct system in accordance with claim 18, wherein said first cable duct section is a generally straight channel duct section.

36. A cable duct system in accordance with claim 18, wherein said first cable duct section is a fitting.

37. A cable duct system in accordance with claim 18, wherein said first cable duct section includes at least one engagement ridge for enhancing the engagement of said first arm of said barb therewith.

38. A method for assembling a cable duct system, said method comprising:

- providing a first cable duct section having an end;
- providing a second cable duct section having an end;
- providing a cable duct coupler having an channel portion with a first portion generally complementary to said end of said first cable duct section and a second portion generally complementary to said end of said second cable duct section, a first outer guide element generally complementary to said end of said first cable duct section and a second outer guide element generally complementary to said end of said second cable duct section, a barb mount extending from at least one of said channel portion and said outer guide elements, and a barb having a body and first and second arms extending from said body, said barb being mounted on said barb mount, wherein at least a portion of said first arm extends at an angle between said first portion of said channel portion and said barb body and at least a portion of said second arm extends at an angle between said second portion of said channel portion and said barb body;



inserting said end of said first cable duct section between said first portion of said channel portion and said first outer guide element until said first arm of said barb engages said first cable duct section to significantly resist withdrawal of said first cable duct section; and

inserting said end of said second cable duct section between said second portion of said channel portion and said second outer guide element until said second arm of said barb engages said second cable duct section to significantly resist withdrawal of said second cable duct section.